

RESPONSE UNDER 37 C.F.R. § 1.116

EXPEDITED PROCEDURE – Art Unit 2814

Attorney Docket No. 108298742US

Disclosure No. 03-0599.00/US

REMARKS

Claims 1-30 were pending in the application at the time the present Office Action was mailed. Claims 16, 21, 23 and 24 have been cancelled by the present response without commenting on or conceding the merits of the rejections of these claims. Claims 17-20, 22 and 25-30 have been amended. More specifically, claims 22 and 30 have been rewritten in independent form to include all of the features of the corresponding base claims and any intervening claims. However, these claims have not been amended in a manner that would necessitate a new search of the prior art. Accordingly, any subsequent rejection of claims 22 and 30 based on new grounds cannot be made final. Claims 17-20 have been amended to depend from base claim 22, and claims 25-29 have been amended to depend from base claim 30. Based on the foregoing, claims 1-15, 17-20, 22 and 25-30 remain pending in the present application.

Claims 1-30 were rejected in the present Office Action. More specifically, the status of the claims in view of the present Office Action is as follows:

(A) Claims 1-3, 5, 6, 9, 10, 13-18, 21, 23-26, 29 and 30 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,620,731 to Farnworth, et al. ("Farnworth");

(B) Claims 4, 7, 8, 19 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Farnworth in view of U.S. Patent No. 3,345,134 to Heymer ("Heymer"); and

(C) Claims 11, 12, 22, 27 and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Farnworth in view of U.S. Patent No. 6,667,551 to Hanaoka ("Hanaoka").

The undersigned attorney wishes to thank the Examiner for engaging in a telephone conference on March 10, 2006 to discuss the present Office Action. During the course of the telephone conference, the Examiner acknowledged that the present

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Office Action was improperly marked "final," and should have been marked "non-final." The present Office Action is non-final because it includes a new grounds of rejection for claim 13, but claim 13 was not amended in a manner that would necessitate a new search of the prior art.

During the March 10, 2006 telephone conference, the parties also discussed a number of distinctions between the pending claims and the applied references. For example, the methods of claims 1 and 13 include forming a passage *through a first end portion of a conductive line*, and the method of claim 10 includes *laser-cutting a through-hole through passivation material that fills a hole in a bond pad*. The Examiner acknowledged that none of the applied references teach or suggest, as least, these features of claims 1, 10 and 13. The following remarks summarized the telephone conference of March 10, 2006, and reflect the agreements reached between the Examiner and the undersigned attorney.

A. Response to the Section 102 Rejection of Claims 1-3, 5, 6, 9, 10, 13-18, 21, 23-26, 29 and 30

These claims were rejected under 35 U.S.C. § 102(e) as being anticipated by Farnsworth. In the interest of expediting prosecution, claims 16, 21, 23 and 24 have been cancelled without commenting on or conceding the merits of the rejections of these claims. Accordingly, the rejections of claims 16, 21, 23 and 24 are now moot.

1. Independent Claim 1 is Directed to a Method of Manufacturing a Microelectronic Device that Includes, *inter alia*, Forming a Passage Through a Die, a Bond-Pad and a First End Portion of a Conductive Line

Independent claim 1 is directed to a method of manufacturing a microelectronic device having a die with an integrated circuit. The method includes, *inter alia*, forming a bond-pad on the die, and forming a redistribution layer on the die having a first end portion attached to the bond-pad and a second end portion spaced apart from the bond-pad. The method of claim 1 further includes forming a passage through the die, the bond-pad and *the first end portion of the conductive line*.

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As the Examiner acknowledged during the March 10, 2006 telephone conference, none of the applied references teach or suggest a method of manufacturing a microelectronic device that includes forming a passage through a die, a bond-pad, *and a first end portion of a conductive line*. Accordingly, Farnworth cannot support a Section 102 rejection of independent claim 1 for at least this reason and the rejection should be withdrawn.

Claims 3, 5, 6, 9, 10, 14 and 15 depend from case claim 1. Accordingly, Farnworth cannot support a Section 102 rejection of these dependent claims for at least the reason that this reference cannot support a Section 102 rejection of corresponding base claim 1, and for the additional features of these dependent claims. Dependent claim 10, for example, recites that the bond-pad of claim 1 includes a hole filled with a passivation material. Claim 10 also states that the step of "forming the passage" in base claim 1 includes "laser-cutting a through-hole completely through the die and the passivation material." As the Examiner acknowledged during the March 10, 2006 teleconference, none of the applied references teach or suggest laser-cutting a through-hole through passivation material filling a hole in a bond-pad. Accordingly, the rejection of dependent claim 10 should be withdrawn for this additional reason.

Independent claims 13 and 30 include passage and/or via forming features that are at least generally similar to the passage forming feature of claim 1 discussed above. Accordingly, Farnworth cannot support a Section 102 rejection of independent claims 13 and 30 for at least this reason, and the rejection should be withdrawn.

Claims 25, 26 and 29 have been amended to depend from base claim 30. Accordingly, Farnworth cannot support a Section 102 rejection of these dependent claims for at least the reason that this reference cannot support a Section 102 rejection of corresponding base claim 30, and for the additional features of these dependent claims. Therefore, the rejection of these dependent claims should also be withdrawn.

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2. Independent Claim 22 is Directed to a Method of Manufacturing a Microelectronic Device that Includes, *inter alia*, Filling a Hole Through a Bond-Pad with Passivation Material, and Laser-Cutting a Through-Hole Through the Passivation Material

Independent claim 22 is directed to a method of manufacturing a microelectronic device having a bond-pad electrically coupled to an integrated circuit. The method includes, *inter alia*, etching a hole through the bond-pad, and filling the hole with a passivation material. The method further includes forming a passage completely through the die and the bond-pad by laser-cutting a hole through the passivation material in the bond-pad. As the Examiner acknowledged during the March 10 telephone conference, Farnworth fails to teach or suggest etching a hole through a bond-pad, filling the hole with a passivation material, and laser-cutting a hole through the passivation material. Accordingly, Farnworth cannot support a Section 102 rejection of independent claim 22 for at least this reason, and the rejection should be withdrawn.

Claims 17 and 18 depend from base claim 22. Accordingly, Farnworth cannot support a Section 102 rejection of dependent claim 17 and 18 for at least the reason that this reference cannot support a Section 102 rejection of corresponding base claim 22, and for the additional features of these dependent claims. Therefore, the rejection of dependent 17 and 18 should be withdrawn.

B. Response to the Section 103 Rejection of Claims 4, 7, 8, 19 and 20

Claims 4, 7, 8, 19 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Farnworth in view of Heymer. Claims 4, 7 and 8 depend from base claim 1, and claims 19 and 20 depend from base claim 22. Farnworth fails to teach or suggest all the features of base claims 1 and 22 for at least the reasons set forth above. Furthermore, Heymer fails to cure the deficiencies of Farnworth with respect to claims 1 and 22. Accordingly, the combination of Farnworth and Heymer cannot support a Section 103 rejection of claims 4, 7, 8, 19 and 20 for at least the reason that these references cannot support a section 103 rejection of corresponding base claims 1 and 22, and for the additional features of these dependent claims. Therefore, the rejections of dependent claims 4, 7, 8, 19 and 20 should be withdrawn.

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C. Response to the Section 103 Rejection of Claims 11, 12, 22, 27 and 28

Claims 11, 12, 22, 27 and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Farnworth in view of Hanaoka. Claims 11 and 12 depend from base claim 1, and claims 27 and 28 depend from base claim 30. As set forth above, Farnworth fails to teach or suggest all the features of base claims 1 and 30. Furthermore, Hanaoka fails to cure the deficiencies of Farnworth with respect to claims 1 and 30. Therefore, the combination of Farnworth and Hanaoka cannot support a Section 103 rejection of dependent claims 11, 12, 27 and 28 for at least the reason that these references cannot support a Section 103 rejection of base claims 1 and 30, and for the additional features of these dependent claims. Therefore, the rejection of dependent claims 11, 12, 27 and 28 should be withdrawn.

Claim 22 has been rewritten in independent form to include all the features of corresponding base claim 16 and any intervening claims. Claim 22 is directed to a method of manufacturing a microelectronic device having a bond-pad electrically coupled to an integrated circuit. The method includes, *inter alia*, etching a hole through the bond-pad, filling the hole with a passivation material, and forming a passage through the die and the bond pad. Claim 22 goes on to state that "forming the passage through the die and the bond-pad includes laser-cutting a through-hole through the die and the passivation material"

As discussed above with reference to dependent claim 10, Farnworth fails to teach or suggest the feature of laser-cutting a through-hole through passivation material in a bond-pad. Furthermore, Hanaoka fails to cure this deficiency of Farnworth. For example, as discussed with the Examiner on March 10, 2006, in Figure 4B Hanaoka teaches etching a hole 44 into the semiconductor chip 10. In Figure 4C, Hanaoka teaches forming a pinhole 48 through the semiconductor chip 10 with, e.g., a laser beam. However, as Figure 4C clearly illustrates, the pinhole 48 is not cut through any layers of passivation material. Accordingly, the combination of Farnworth and Hanaoka cannot support a Section 103 rejection of independent claim 22 for at least the reason that neither of these references teach or suggest, at least, laser-cutting a through-hole

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through passivation material in a bond-pad. Therefore, the rejection of claim 22 should be withdrawn.

The discussion of Farnworth herein addresses the relevant embodiments disclosed in the specification and figures of Farnworth, and in no way is a characterization or interpretation of the claims in Farnworth. The claims in Farnworth, moreover, are expressly not limited to the embodiments disclosed in the specification of Farnworth. Therefore, the claims in Farnworth are to be interpreted without reference to this paper.

Reconsideration and withdrawal of the rejections set forth in the Office Action dated December 16, 2005 are respectfully requested.

VI. Conclusion

In view of the foregoing, the claims pending in the application comply with 35 U.S.C. § 112 and patentably define over the applied art. Therefore, a Notice of Allowance is respectfully requested. If the Examiner has any questions or believes another telephone conference would expedite prosecution of this application, the Examiner is encouraged to call the undersigned at (206) 359-6351.

Respectfully submitted,

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